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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/006,593	12/05/2001	Katherine S. Bowdish	1087-2	3532
7590 05/23/2008 FISH & NEAV IP GROUP OF ROPES & GRAY LLP ONE INTERNATIONAL PLACE BOSTON, MA 02110				
EXAMINER GUSLOW, ANNE				
ART UNIT		PAPER NUMBER		
1643				
MAIL DATE		DELIVERY MODE		
05/23/2008		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/006,593

Applicant(s)

BOWDISH ET AL.

Examiner

ANNE M. GUSSOW

Art Unit

1643

Period for Reply -- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 January 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3,5-11,18-23,36,44,85-87,89 and 96-126 is/are pending in the application.
- 4a) Of the above claim(s) 20 and 21 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3,5-11,18,19,22,23,36,44,85-87,89 and 96-126 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

1. Claims 1, 44, 86, 96, and 99 have been amended.

Claims 20 and 21 remain withdrawn.

2. Claims 1-3, 5-11, 18, 19, 22, 23, 36, 44, 85-87, 89, and 96-126 are under examination.

Claim Objections

3. Claims 113-126 are objected to because of the following informalities: the claim status identifiers have not been updated to "previously presented" with the filing of the newly amended claims. Appropriate correction is required.

Rejections Withdrawn

4. The rejection of claims 1-3, 5-11, 18, 19, 22, 23, 36, 96, 99, 100, 101, 104-112, and the newly added claims 113-126 under 35 U.S.C. 103(a) as being unpatentable over Barbas, et al. (a) (WO 94/18221) and further in view of Dower, et al. (WO 96/40750) and Barbas, et al (b) (PNAS, 1995) and in view of Cwirla, et al. (Science, 1997) and further in view of Wrighton, et al. (Science, 1996) as evidenced by Helms (Protein Science, 1995) is withdrawn in view of applicant's arguments and the declaration of James D. Marks.

Rejections Maintained

Claim Rejections - 35 USC § 112

5. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

6. The rejection of claims 1-3, 5-11, 18, 19, 22, 23, 36, 44, 85-87, 89, 96-112, and newly added claims 113-126 under 35 U.S.C. 112, first paragraph, as lacking enablement is maintained.

The response filed January 22, 2008 has been carefully considered but is deemed not to be persuasive. The response states that the Examiner's attention is drawn to Example 7 in the specification which describes the construction of a heavy chain CDR2 library. CDR2 is partially replaced by the TPO mimetic peptide. The first 10 amino acids of CDR2 were replaced with 11 amino acids of TPO mimetic peptide and flanking sequence while 7 amino acids of CDR2 remain. The library was subsequently panned for binding to cMpl-R. The specification, therefore, provides a working example of an immunoglobulin wherein a portion of a CDR is replaced with a peptide mimetic.

Furthermore, Applicants respectfully disagree with the Examiner's reliance on the Rudikoff et al., Colman et al. and Ibragimova references. The Examiner points to the references to demonstrate that even minor changes within the CDR sequences are known to dramatically affect the binding function of an antibody. As Applicants have explained in our previous response (mailed April 19, 2007), the binding ability of the claimed immunoglobulin molecules does not depend on the precise three dimensional

Art Unit: 1643

conformation of the CDR regions as is the case for conventional antibody-antigen interactions. The peptide mimetics are inserted into the CDRs only because these regions are solvent exposed. As opposed to a typical antibody wherein it is necessary for the six different CDRs to be in the proper conformation relative to each other for proper binding to the antibody target and where a change in the antibody sequence may disrupt the normal conformation, in the present case the immunoglobulin is acting as a carrier for a peptide and it is merely necessary for the peptide mimetic within the carrier to be exposed and to retain its activity, the remaining 5 CDRs are irrelevant. There is no need for six separate CDRs to bind a single target in the claimed molecules, rather only the mimetic needs to bind the target. The CDR sequence that is being replaced by the mimetic is irrelevant to the activity of the mimetic (see response pages 6-7).

In response to this argument, the claims are drawn to an immunoglobulin molecule and the structure of an immunoglobulin molecule is defined by the presence of six CDR regions in a particular arrangement to function in binding antigen. A molecule containing fewer than 6 CDRs does not function as an immunoglobulin to bind antigen. Thus, the immunoglobulin molecule as claimed would not be functional without six complete CDR regions. Additionally, regarding applicant's comments relating to the references, these references support the necessity of the 6 CDRs and the importance of amino acids within those CDRs to maintain the function of an immunoglobulin molecule. Since the claims are directed to an immunoglobulin molecule the reference are relevant to the structure and function of the claimed molecule.

Art Unit: 1643

Therefore, after a fresh consideration of the claims and the evidence provided the rejection is maintained.

Double Patenting

7. The provisional rejection of claims 1-3, 5-8, 18, 22, 23, 36, 44, 85, 97-99, and 100-112 on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-6, 8, 10, 11, 16, 26-35, and 38-56 of copending Application No. 10/307,724 is maintained.

The response filed January 22, 2008 has been carefully considered but is deemed not to be persuasive. The applicant's argue that the provisional rejections made under the judicially created doctrine of obviousness type double patenting be held in abeyance until otherwise allowable subject matter is identified in the instant application. Once allowable subject matter has been identified Applicant's will address the rejection (see response page 10).

In response to this argument, the claims of copending Application No. 10/307,724 are still pending and a terminal disclaimer has not been filed.

Therefore, after a fresh consideration of the claims and the evidence provided the rejection is maintained.

Conclusion

8. No claims are allowed.

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANNE M. GUSSOW whose telephone number is (571)272-6047. The examiner can normally be reached on Monday - Friday 8:30 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Helms can be reached on (571) 272-0832. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only.

Art Unit: 1643

For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Anne M. Gussow

May 21, 2008

/David J Blanchard/
Primary Examiner, Art Unit 1643